Interpreting nearshore fish community dynamics from Strait of Georgia juvenile herring surveys

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Annual purse seine surveys, conducted since 1991, assess juvenile herring abundance at about 50 fixed locations in the Strait of Georgia in late summer. Other nearshore species are sampled incidentally during this survey. We hypothesized that incidental capture data could show possible temporal and spatial changes in nearshore fish communities. Sampling sites varied between open water and within wide channels. Standard community metrics were calculated for each station, in each year including species richness, evenness, total and herring abundance and Shannon-Weiner and Simpson's diversity indices. Richness and both measures of abundance were highest at nearshore sampling stations, although there were significant differences in all community metrics among sampling dates (years) and among sampling transects. Species richness did not differ between open water and channel sites but, each of the remaining community metrics did. Open water sites had a higher Shannon-Weiner index and evenness suggesting an equitable distribution of a number of species. Channel sites had an increased Simpson's index and increased total abundance suggesting these sites are dominated by fewer, more abundant species. We conclude that juvenile herring surveys can measure change in fish communities.